Comparisons of Job Characteristics

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 91

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Computers and Electronics	8.4	23.8	22.8	0	Current knowledge level may be sufficient
Mathematics	9.2	15.4	18.3	>	Current knowledge level is likely sufficient
Engineering and Technology	5.7	10.1	12.0	>	Current knowledge level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 76

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Programming	2.2	14.6	12.4	<	A higher skill level may be required
Complex Problem Solving	9.1	14.1	13.2	0	Current skill level may be sufficient
Troubleshooting	4.5	13.5	7.0	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	13.4	14.7	0	Current skill level may be sufficient
Systems Analysis	6.5	13.3	13.6	0	Current skill level may be sufficient
Mathematics	6.2	12.0	11.3	0	Current skill level may be sufficient
Operations Analysis	5.0	11.4	10.6	0	Current skill level may be sufficient
Technology Design	2.6	10.3	10.0	0	Current skill level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 99

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Deductive Reasoning	10.6	13.6	14.6	0	Current ability level may be sufficient
Mathematical Reasoning	6.3	12.4	10.8	<	Some improvement in abilities may be required
Fluency of Ideas	7.6	11.9	12.8	0	Current ability level may be sufficient
Number Facility	6.3	11.2	9.8	<	Some improvement in abilities may be required
Category Flexibility	9.0	11.1	12.4	>	Current ability level is likely sufficient
Originality	7.6	10.8	11.0	0	Current ability level may be sufficient
Selective Attention	8.7	10.5	9.8	0	Current ability level may be sufficient
Speed of Closure	5.9	8.1	7.5	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Work Activities	Exclusivity of Activity
Communicate technical information	4
Design computer hardware or software interface	87
Design data processing systems	92
Design data security systems	89
Design electronic equipment	74
Design hardware or software systems	92
Develop mathematical or computer languages	89
Develop mathematical simulation models	70
Develop or maintain databases	30
Develop tables depicting data	33
Follow data security procedures	77
Follow data storage procedures	75
Make presentations	13
Prepare technical reports or related documentation	22
Program computers for electronic engineering applications	87
Program computers using existing software	85
Program mainframe computer	84
Provide technical computer training	82
Resolve engineering or science problems	46

Test computer programs or systems	78
Use computer networking technology	81
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use knowledge of mainframe computers	78
Use project management techniques	47
Use scientific research methodology	21
Use spreadsheet software	18
Write computer software, programs, or code	84
Write documentation for computer programming	87

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 86

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Software Engineers, Applications (15-1031)

Tools and Technologies	Exclusivity
Cameras	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Industry specific software	1
Operating environment software	12
Removable storage media	70

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.